

Pending

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sliding rail 8

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EXPLANATORY NOTE

A strong box hinge comprising a first tongue 4 affixed to the interior surface of lid 2 adjacent edge 5 of the lid. The second tongue 6 of hinge 3 which is affixed to tongue 4 by a pivot pin 7 is affixed to sliding rail 8 which is itself constrained for a limited range of linear movement by track 9 mounted under inwardly directed horizontal flange 10 on the side 11 of box 1.

STRONG BOX HINGE SYSTEM

The present invention relates to a strong box hinge system having a concealed hinge which has useful applications for building site toolboxes, truck mounted boxes and strong boxes for the storage and or transport of goods and or valuables requiring a high level of security.

Tool boxes and other strong boxes have for many years been produced having hinged lids which normally open the top of the box. If however such boxes are to resist unauthorized opening or tampering they must, in addition to a secure locking system, have a secure hinge system between the lid and the box which does not facilitate unauthorized opening of the box by removal of the hinge, hinges or parts thereof. For example if any of the screws, rivets or other fixing devices associated with a hinge are exposed they may be drilled or readily removed and more particularly if the hinge pin itself is exposed on the external surfaces of the box then the pin may readily be removed in order to separate the two tongues of the hinge thereby destroying its integrity.

It is also desirable that the lid of a strong box contain a flange about the peripheral portions thereof which overlaps the upper peripheral portions of the box itself in order to make it difficult to insert an object between the lid and the box so as to pry the box open.

Unfortunately the incorporation of such a flange into a lid for a box makes it very difficult to incorporate a hinge on the box as the flange portion of the lid adjacent the hinge would interfere with the upper peripheral portions of the box when the hinge is opened.

It is accordingly an object of the present invention to provide a hinge system for a strong box, toolbox or the like which ameliorates one or more of the above disadvantages with existing toolboxes or at least provides the market with an alternative.

According to the present invention there is provided a strong box having a hinged opening lid; the lid for the box having a flange adapted to overlap and sit down over the upper peripheral portions of the box when the lid is in the closed and secured position; one or more hinges

between the lid and the box; one tongue of the hinge being fixed to the internal surface of the lid adjacent and edge thereof with the opposing tongue of the hinge slideably mounted within the box so as to facilitate the movement of the pivot point of the hinge from a position immediately adjacent the box side to a position sufficiently outboard of the side of the box so as to facilitate opening of the lid without the flange of the lid fouling the side of the box; the mounting of the hinge being such that when the lid of the box is in the closed position the flange of the lid entirely conceals all parts of the hinge.

One embodiment of the present invention will now be described with reference to the accompanying drawings in which;

Figure 1 is a part sectional view through a toolbox lid and hinge system in accordance with the present invention;

Figure 2 is a side elevation of a toolbox in accordance with the present invention; and

Figure 3 is a partial top plan view of the hinge system of the box of figures 1 and 2.

The embodiment of figures 1 - 3 discloses a toolbox 1 having a lid 2 attached thereto by hinge 3. Hinge 3 in turn comprises first tongue 4 affixed to the interior surface of lid 2 adjacent edge 5 of the lid. The second tongue 6 of hinge 3 which is affixed to tongue 4 by a pivot pin 7 is affixed to sliding rail 8 which is itself constrained for a limited range of linear movement by track 9 mounted under inwardly directed horizontal flange 10 on the side 11 of box 1.

It will be appreciated that the lid 2 of the toolbox is provided with a downwardly facing peripheral flange 12 extending about the entire periphery of the lid 2 which extends down over the upper peripheral portions 13 of box 1 so that it is difficult to insert a lever between the lid 2 and box 1 in order to prise the lid off the box when the lid is in the closed and secured position (not shown).

If the lid 2 was secured to the box 1 by a conventional hinge with the pivot point 7 of the hinge

adjacent box wall 11 it will be appreciated that opening of the lid would cause the lower portions of flange 12 to foul the side 11 of the box thereby preventing opening to the lid. Rail 8 however facilitates outboard movement of tongue 6 and hence pivot 7 and attached lid 2 with respect to the box from a position where pivot 7 lies substantially adjacent (not shown) vertical wall 14 of the box to a position wherein it lies substantially outboard of side 14 of the box as depicted in figures 1, 2 and 3.

In order to open a secured toolbox in accordance with the present invention that side of the lid opposite the hinged side is released from its securing device and then lifted so that the lower portions of flange 12 are above the upper extremities of the box. The lid is then pushed laterally so that the rail 8 moves in track 9 moving the lid laterally with respect to the box into the position depicted in figure 2. The edge of the lid opposite the edge to which the hinge or hinges are mounted may then be lifted into a fully open position as depicted in figure 1 without fear of flange 12 fouling side 14.

It will be appreciated that tongue 6 of the hinge extends through the side 14 of the box and for this purpose a rectangular U-shaped cut-out may be provided adjacent the upper edge of side 14 as is partially depicted in figure 3. Flange 12 should however be of sufficient length so as to cover the hinge in its entirety and such cut-out when the lid is closed. In this way flange 12 will prevent levering devices being inserted between the box and the lid adjacent the locality of the hinge. Indeed the precise locality of the hinge will not be ascertainable due to the blinding effect of flange 12 when the lid is in the closed position.

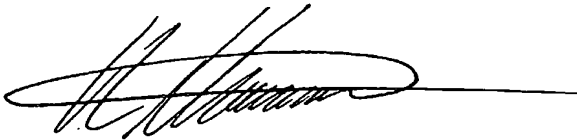
It will be appreciated that various mechanisms may be devised for sliding rail 8 and track 9 in order to facilitate the lateral movement of the hinge with respect to the box which is required in order to facilitate working of the present invention.

The claims defining the invention are as follows:

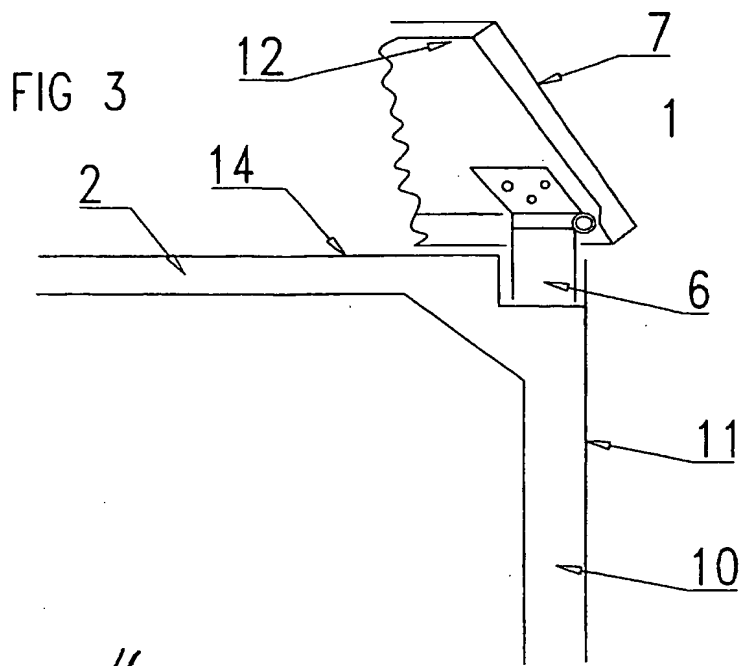
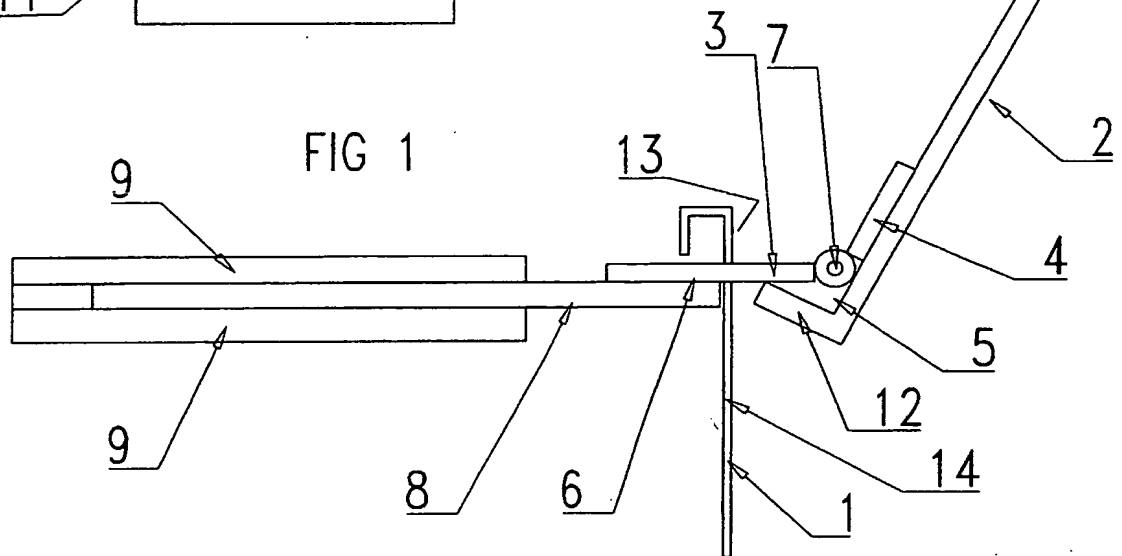
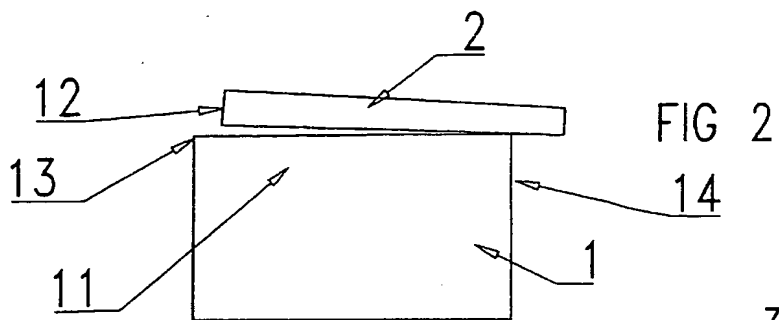
1. A strong box hinge system comprising one tongue of the hinge fixed to the internal side of the lid by weld, rivet, bolt or glue and the other tongue attached by above methods internally to the box body by means of a sliding rail in a track.
2. The strong box hinge system of claim 1 wherein the hinge, sliding rail and track are manufactured from ferrous or non ferrous metals or materials.
3. The strong box hinge system of claim 1 and 2 wherein the shape of hinge, sliding rail and track are altered - eg. round, square, oval, triangular or flat.

It should also be appreciated that the invention is not restricted to the embodiment above described as various embodiments of the present invention will be apparent to those skilled in the art without departing from the scope and intendment of the present invention.

DATED 4 - 1 - 2000



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